

## POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard civil time	Heliographic			Area		Total area for each day
		Diff. long.	Longi- tude	Lat- itude	Spot	Group	
1932	H m	°	°	°			
Jan. 26 (Mount Wilson).....	12 0	-72.0	175.8	+13.0	211	7	-----
		-31.0	216.8	+0.5	154		-----
		-8.0	239.8	-13.0			-----
		+24.0	271.8	+8.0	27		-----
		+41.0	288.8	-6.0	22		421
Jan. 27 (Naval Observatory).....	10 17	-64.0	171.6	+12.5	247		-----
		+5.0	240.6	-13.0	62		309
Jan. 28 (Naval Observatory).....	11 42	-50.0	171.7	+12.5	108		-----
		+18.0	239.7	-13.0	77		185
Jan. 29 (Perkins Observatory).....	-- --	-36.0	171.5	14.5	96		-----
		+30.5	238.0	-10.0	80		176
Jan. 30 (Naval Observatory).....	12 46	-22.0	172.7	+13.0	123		-----
		+46.0	240.7	-13.0	62		185
Jan. 31 (Naval Observatory).....	11 36	-9.5	172.7	+12.5	108		-----
		+59.0	241.2	-13.0	77		185
Mean daily area for January.....							98

## PROVISIONAL SUN-SPOT RELATIVE NUMBERS, JANUARY, 1932

(Dependent alone on observations at Zurich and its station at Arosa)

[Data furnished through the courtesy of Prof. W. Brunner, University of Zurich, Switzerland]

January, 1932	Relative numbers	January, 1932	Relative numbers	January, 1932	Relative numbers
1-----	12	11	0?	21	d 8
2-----	25	12	0	22	18
3-----		13	0	23	17
4-----	8	14	Mc	24	16
5-----	8	15	10	25	25
6-----	0?	16	15	26	d 42
7-----	0?	17	12	27	a 36
8-----		18	8	28	18
9-----	0	19	7	29	18
10-----	7	20	0	30	18
				31	17

Mean, 28 days=12.3.

a=Passage of an average-sized group through the central meridian.  
b=Passage of a large group or spot through the central meridian.  
c=New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central circle zone.  
d=Entrance of a large or average sized center of activity on the east limb.

## AEROLOGICAL OBSERVATIONS

[The Aerological Division, W. R. GREGG, in charge]

By L. T. SAMUELS

The free-air temperatures for the month were decidedly above normal at most stations and levels. (See Table 1.) At Dallas, Ellendale, and Omaha, negative departures in the lower levels changed to positive at higher elevations. At the more eastern stations the positive departures were exceptionally large while at San Diego they were negative at all levels.

Relative humidities were mostly above normal in the lower levels and below normal in the upper levels.

The resultant winds at 1,000-meter elevation were southerly as compared to a westerly normal in the northern

Gulf region. Elsewhere, the monthly values did not differ appreciably from the normals for this level. At 2,500 meters the westerly component predominated in the monthly resultants. A marked exception occurred at this level at Key West, where the monthly resultant was easterly while the normal is westerly. However, at 3,000 meters at this station the monthly resultant was south-southwesterly as compared to a normal west-south-westerly.

TABLE 1.—Free-air temperatures and relative humidities during January, 1932

TEMPERATURE (°C.)

Altitude (meters) m. s. l.	Chicago, Ill. <sup>1</sup> (190 meters)		Cleveland, Ohio <sup>1</sup> (245 meters)		Dallas, Tex. <sup>2</sup> (149 meters)		Due West, S. C. (217 meters)		Ellendale, N. Dak. (444 meters)		Hampton Roads, Va. <sup>3</sup> (2 meters)		Omaha, Nebr. <sup>4</sup> (299 meters)		Pensacola, Fla. <sup>3</sup> (2 meters)		San Diego, Calif. <sup>5</sup> (9 meters)		Washington, D. C. <sup>3</sup> (2 meters)	
	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal
Surface.....	-1.0	+3.3	2.8	+7.1	5.5	-0.7	9.4	+3.5	-13.3	-2.2	10.6	+3.3	-8.1	-2.1	14.8	+3.8	11.8	-1.3	5.8	+5.6
500.....	-1.7	+3.7	2.5	+7.9	6.3	+0.5	9.7	+3.8	-12.8	-1.8	9.5	+2.8	-7.3	-1.2	14.1	+3.5	9.7	-1.9	6.5	+6.3
1,000.....	-2.4	+3.0	1.1	+6.5	7.2	+1.5	8.5	+3.5	-8.6	+0.2	7.7	+3.0	-4.7	-0.1	12.5	+3.2	7.8	-2.1	5.6	+6.4
1,500.....	-2.2	+3.7	0.1	+6.0	6.3	+1.3	6.7	+3.2	-7.6	+0.5			-3.0	+1.1						
2,000.....	-3.0	+3.9	-1.7	+5.2	4.8	+1.4	5.3	+3.6	-9.5	+0.1			-3.7	+1.7						
2,500.....	-4.9	+3.8	-3.8	+4.9	3.0	+1.7	5.1	+5.3	-11.3	+0.5	4.8	+3.8	-5.8	+1.8	9.2	+2.6	3.5	-1.9	3.2	+6.6
3,000.....	-7.0	+4.0	-5.9	+5.1	0.6	+1.7	2.5	+4.9	-14.3	+0.1	0.7	+3.7	-8.0	+2.1	5.6	+3.0	0.5	-0.5	0.1	+6.6
4,000.....	-12.2	+3.6	-10.6	+5.2	-5.4	+1.2			-19.9	-0.1			-14.0	+1.4						
5,000.....			-17.2	+5.4	-12.1	+0.6							-20.9	+0.6						

RELATIVE HUMIDITY (PER CENT)

Surface.....	84	+5	80	+1	83	+6	85	+14	87	+6	76	+1	86	+4	86	+4	62	-1	74	+4
500.....	82	+7	80	+5	75	+5	76	+13	84	+5	76	+6	83	+4	80	+5	59	-1	61	-1
1,000.....	76	+11	79	+14	64	+3	69	+12	70	+4	71	+6	73	+7	74	+7	52	0	56	-2
1,500.....	61	+3	70	+12	55	+1	64	+11	62	+3			61	+2						
2,000.....	53	0	67	+14	49	0	56	+7	59	+1	51	+1	53	-4	62	+9	40	0	49	-3
2,500.....	52	-1	64	+11	44	-2	40	-5	57	-1			52	-4						
3,000.....	50	-4	60	+6	42	0	47	+4	58	0	37	-2	51	-5	54	+10	30	+1	34	-9
4,000.....	42	-13	54	-1	38	0			61	+7			43	-10						
5,000.....			51	-8	41	+5							38	-16						

<sup>1</sup> Normals for Royal Center, Ind., used.<sup>2</sup> Normals determined by interpolating between those for Groesbeck, Tex., and Broken Arrow, Okla.<sup>3</sup> Naval air stations.<sup>4</sup> Normals for Drexel, Nebr., used.